M35160 ERASER/PROGRAMMER

User's Guide

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1. Introduction

This manual will guide you through the installation of the M35160 Eraser/Programmer, referenced hereafter as the M35160 programmer. The M35160 programmer has been designed for on-board access 8/16 Kbit serial SPI EEPROM with incremental registers M35160;D160D0WQ; D80D0WQ; M35080-3; M35080-6 with clock rates from 3 Mhz up to 10 Mhz via PC or autonomous control operation mode.

M35160 Eraser/Programmer features

- RS232 interface to PC or USB port (optional)
- 8 - pin socket for M35160; D160D0WQ; D80D0WQ ;M35080-3; M35080-6 devices
- Three push buttons for stand alone operation
- Numeric LED display and three LED's for indication operating modes

2. Check list and requirements

Hardware requirements

Host	- A 32-bit x86 based with a free Serial ports (Com1-10) or USB ports (optional) a hard-disk system
Memory	- Minimum 16 Mbytes
Display	- Color VGA display recommended
Power supply	- A 10-15 volt/500 mA linear power supply source
Tool	- M35160 Eraser/Programmer board*
Cable	- An RS232C "straight-thru" cable or USB "A to B" cable (optional)*
Adapters	- four 8-pins PCB adapters or ZIP8-DIP8 adapter (optional)*

Software checklist

OS	- MS-Windows (Win 98, Win 2000, Win XP; Win 7)
Software tool -	- M35160 control software*

**** Package check list***

M35160 Eraser/ Programmer kit:

- M35160 Eraser/Programmer board **
- 9-pin "straight-thru" cable **
- 8 pins PCB adapters: 4 pcs. **
- CD (control software , documentation) **
- This manual **

Optional:

- USB – RS232 converter ***
- USB cable "A to B" type ***
- ZIF8 – DIP8 programming adapter ***

*****NOTE:*** See M35160 Eraser/Programmer package check list
******NOTE:*** See APPENDIX I

3. Installing

To understand M35160 Eraser/Programmer components meaning (Figure 1)

Installing M35160 Eraser/Programmer control software and hardware:

- Navigate CPL CD-ROM : “Install Software” > “Install M35080 Eraser”, then execute “Setup.exe” file. Follow to the setup wizard
- Connect M35160 Eraser/Programmer to the power supply source (10-15 V >=500 mA)
- Attach M35160 Eraser/Programmer to PC
- Make sure that "mode" jumper mounted to the “PC” or “AU” position
- Install target device into the target socket, notice the orientation of the device (Figure 3)
- Turn ON power supply source, power LED appear to green colour and you'll should see “PC” or “AU” message on the numeric display
- M35160.exe control software can be start, if “Function” jumper mounted into PC position. Otherwise, if “Function” jumper mounted into AU position M35160 Eraser/Programmer will remain autonomous operation mode

M35160 ERASER/PROGRAMMER components:

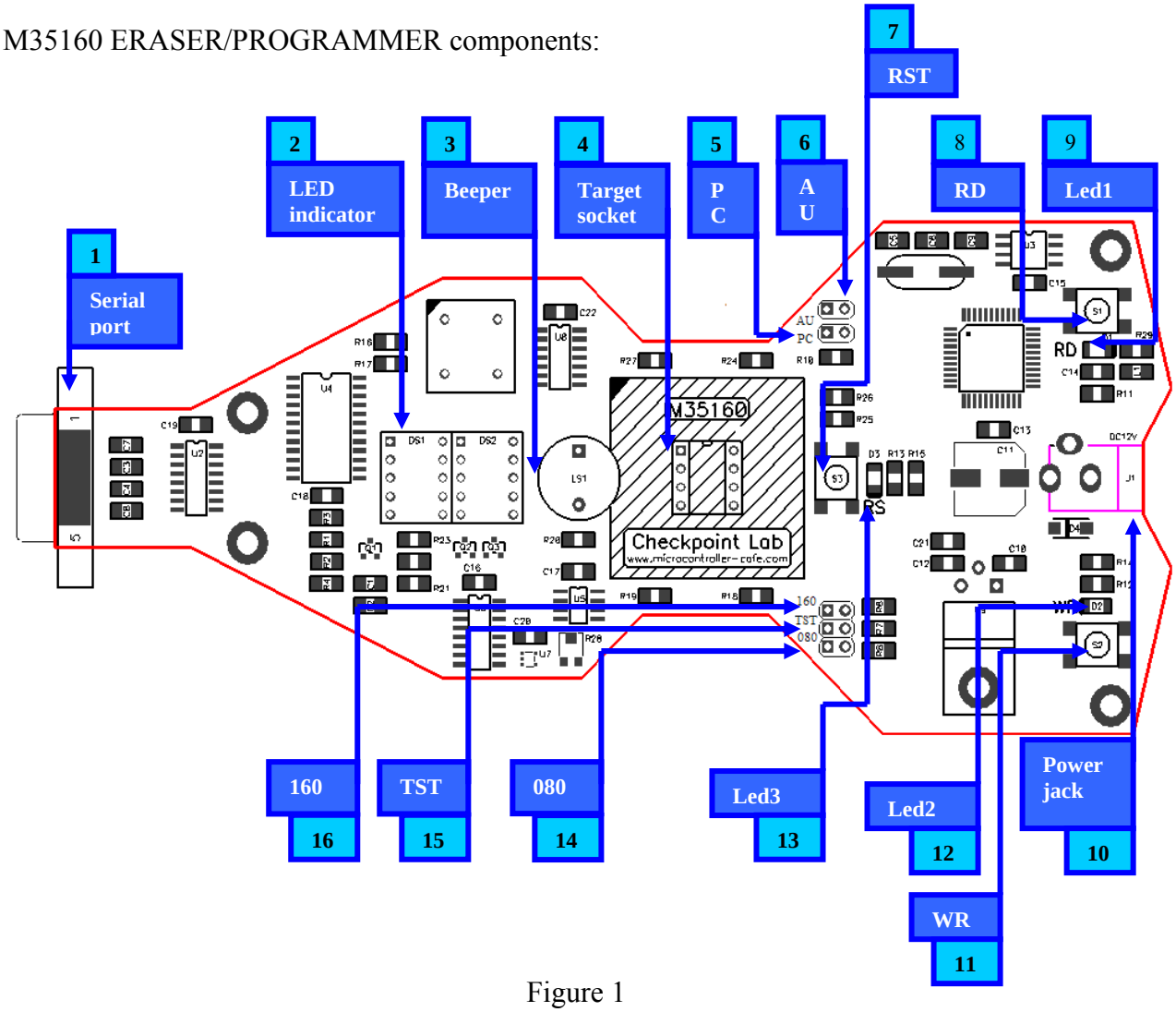
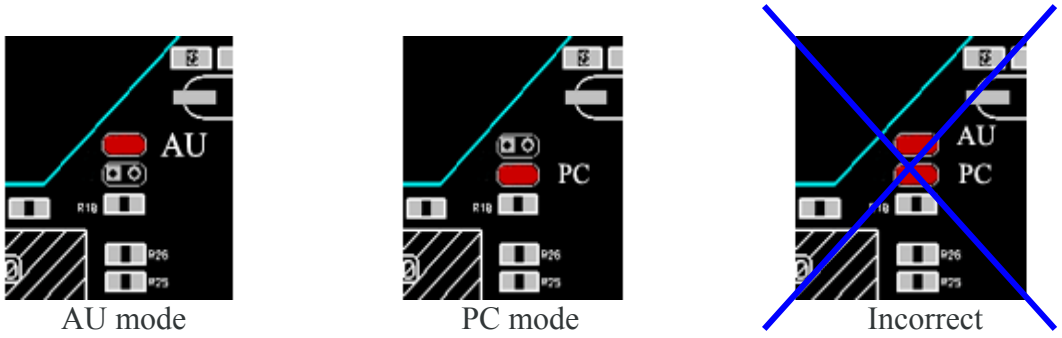


Figure 1

1 - Serial port: DE-9 (DB-9) connector (RS-232 standard)
2 - LED indicator: double digits (two single sections) numeric display
3 - Beeper: piezo buzzer
4 - Target socket: two straight PCB sockets (2.54 mm)
5 - PC: mode operation jumper. PC - personal computer mode
6 - AU: mode operation jumper: AU - autonomous operate
7 - RST: reset button for autonomous operate mode
8 - RD: READ/TEST button for autonomous operate mode
9 - Led1: control led (green color led)
10 - Power jack: DC power jack 2.1 mm
11 - WR: WRINC/ERASE button for autonomous operate mode
12 - Led2: program led (red color led)
13 - Led3: power/status led (green color led)
14 - 080: M35080 jumper. Select M35080-4; M35080-6 devices for autonomous operate mode
15 - TST: Self test mode: Select self test diagnostic mode
16 - 160: M35160 jumper. Select M3160; D160D0WQ; D80D0WQ devices for autonomous operate mode

4. Quick start

Before connecting the power plug, make sure that the power supply source is DC and power supply voltage matches the voltage rating of the M35160 Eraser/Programmer. Select mode of operate Personal Computer or Autonomous by "Function" jumper:



AU mode PC mode Incorrect

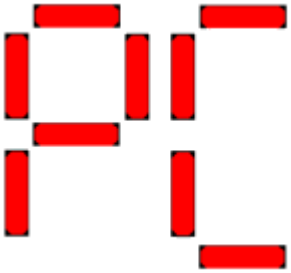
Figure 2

NOTE: Personal Computer (PC) mode will active after Power On Reset only!
AU operation mode activation: mount jumper to AU position then press reset button

Left : Autonomous mode, jumper mounted into AU position
Middle : Personal Computer mode, jumper mounted into PC position
Right : Incorrect installation

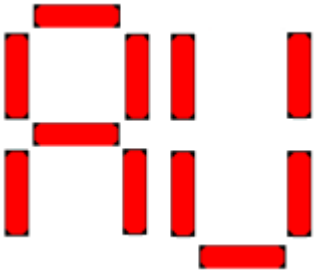
Jumper mounted to PC position, numeric display message: " PC" (Personal Computer)

Status message -->



AU mode jumper mounted. LED display message: “AU“ (Autonomous mode)

Status message -->



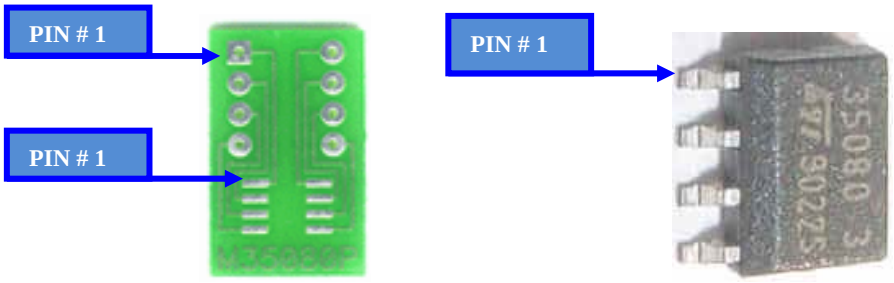


Figure 3

4.1 ERASE : PC mode

Programming software resides in the host computer.

Practical steps:

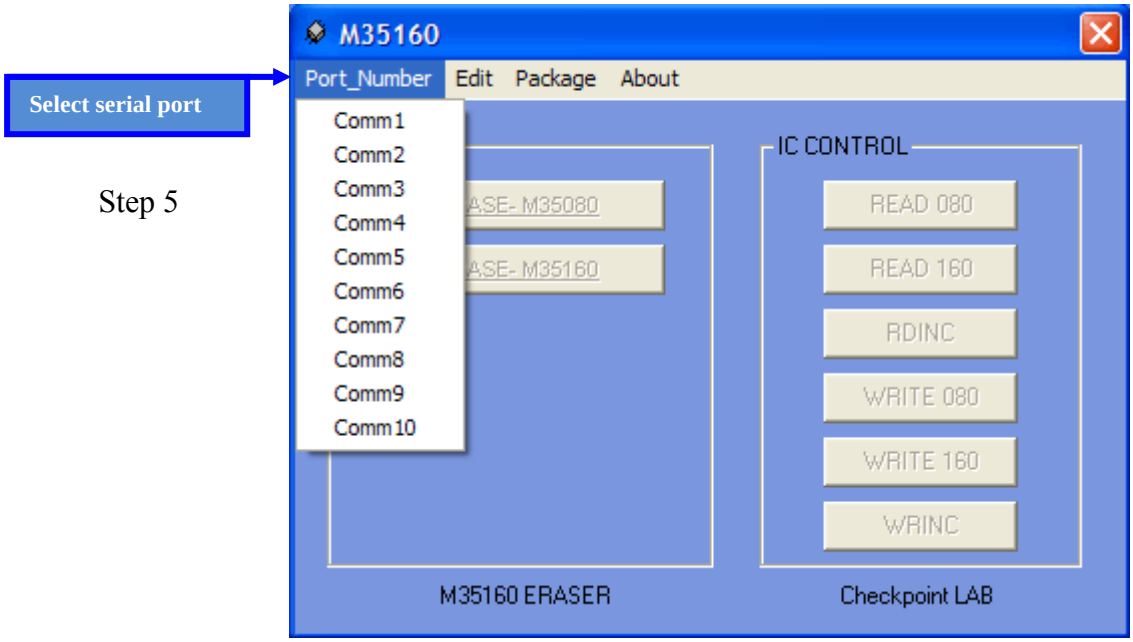
1. Turn ON the M35160 Eraser/Programmer, insert jack plug into power jack
2. Install the target device into the target socket (M35160 marked)
   Notice: 1-pin on the target socked and programming adapter "◙" marked, which point towards pin 1 of the device (Figure 3)
3. Make sure that numeric display message matches to this one: “ PC“
4. Start "M35160.exe" control program
5. Select appropriate serial port
6. By pressing "ERASE - M35080" or "ERASE-M35160" button incremental area bytes are erase according to the target device:
   "ERASE-M35080" for M35080-3; M35080-6 devices
   "ERASE-M35160" for M35160; D160D0WQ; D80D0WQ devices
7. Numeric display message will change to: “ P1“ i.e. pass one procedure, waiting window will display progress bar and terminate button (Figure 7)
8. “ P2“ ”pass two” procedure follow after “pass one” procedure
9. Then numeric display will change one by one numbers of incremental registers recovered to factory settings :

“ PC“ → “ P1“ → “ P2“→ ” 01” → ” 02”..... → ” 15” → ” 16” → “ PC“

The internal buzzer will duplicate every change by sound signal

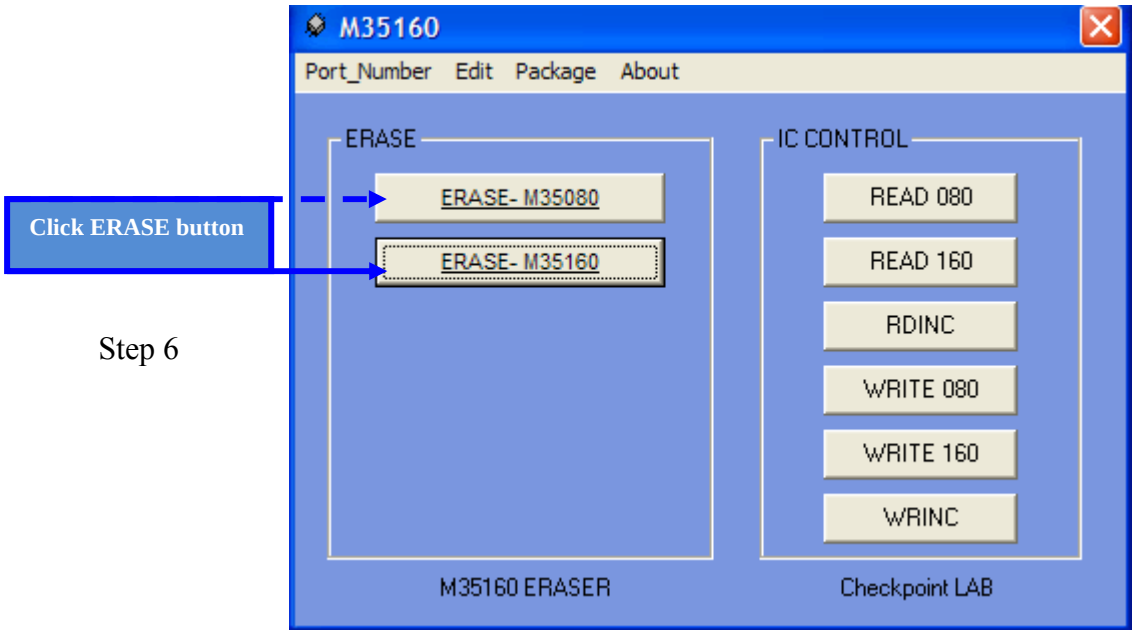
10. In the end of erase procedure you’ll see on the numeric display message: “ PC“

And message window, as result on Figure 7



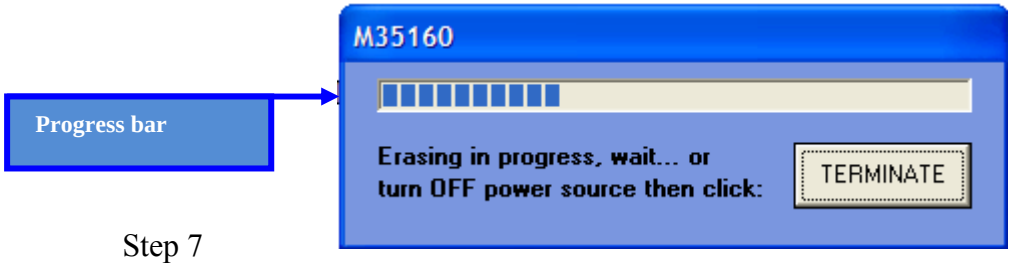
Step 5

Figure 4



Step 6

Figure 5



Step 7

Figure 6

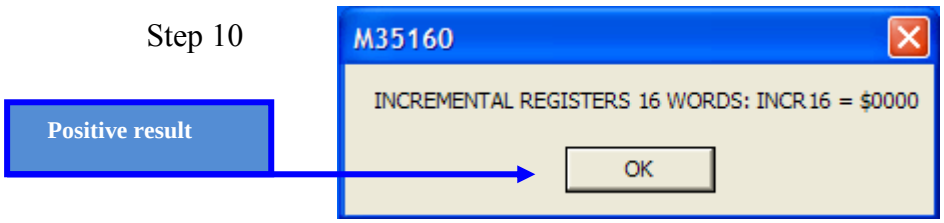


Figure 7

4.2 READ 080 / READ 160 : PC mode

Practical steps:

1. By pressing the "READ 080" or "READ 160" button the EEPROM bytes are read from the target device:
   "READ 080" for M35080; D80D0WQ devices 8 Kbit EEPROM
   "READ 160" for M35160; D160D0WQ devices 16 Kbit EEPROM

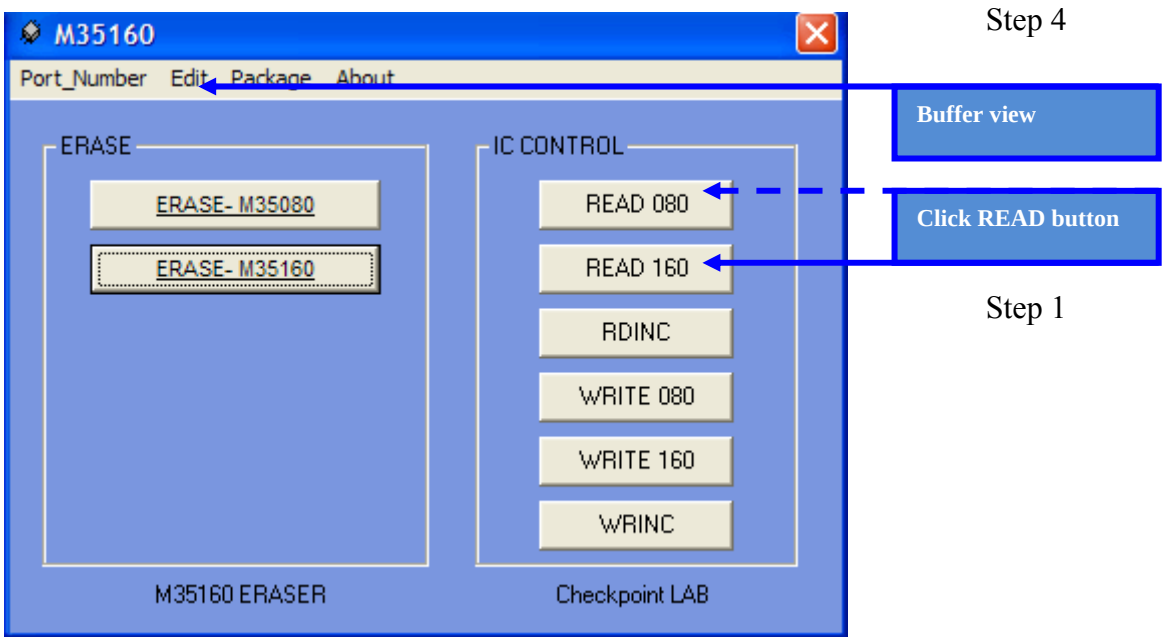
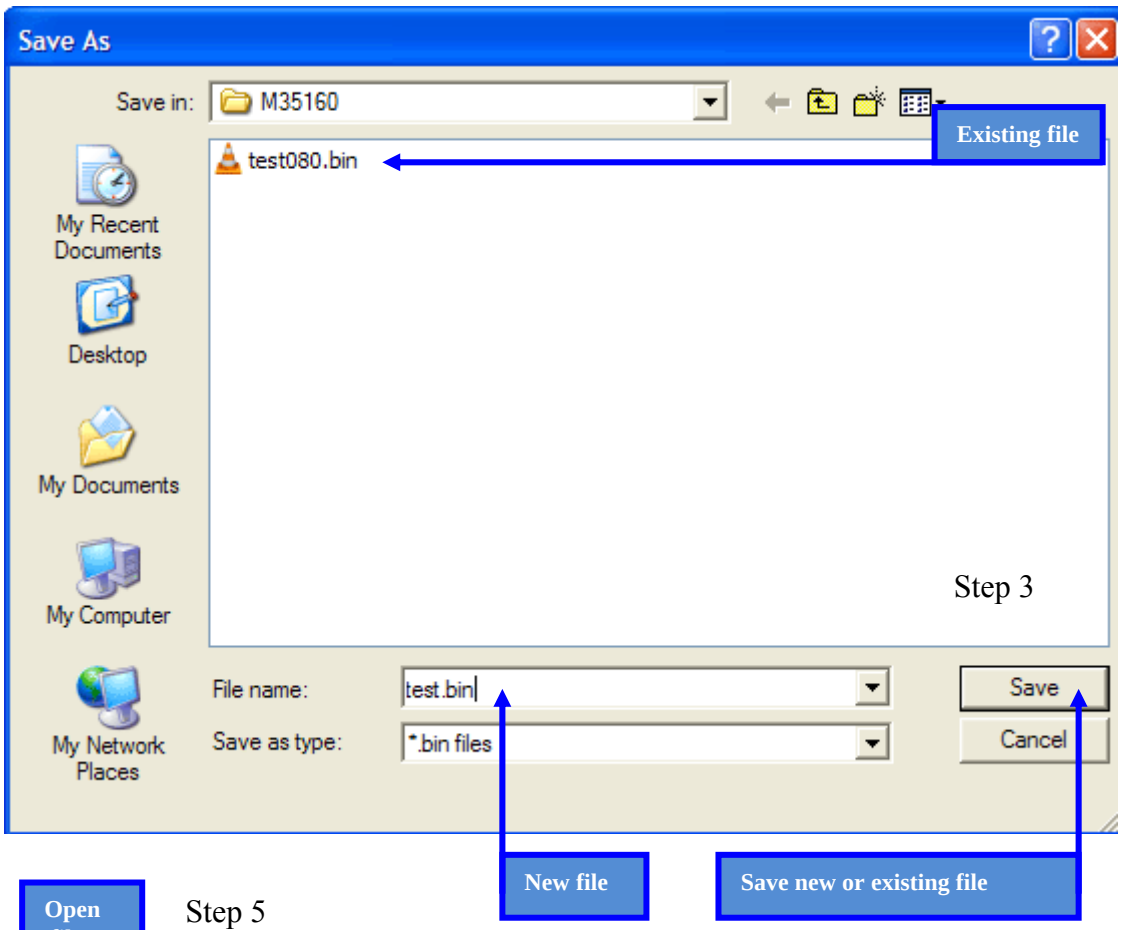


Figure 8

The "READ 080" and "READ 160" command reads the contents of the chip into a specified file

2. The "Save As" box popup. Type new file name or select existing file (Figure 9)
   NOTE: The contents of existing file will re-write to new one
3. By clicking on the "Save" button of "Save As" box the read function will execute.
   You'll see on numeric display message " rF" - read file
4. To view the content read, open the buffer edit dialogue window by the "Edit" menu button
5. By clicking on the "File" then " Open" menu select a file to edit
6. Edit data in case of necessary. The HEX/ASCII data buffer is 8 – bit wide.
   TAB key may be used to switch between HEX and ASCII data for editing


Save As
Save in:
M35160
test080.bin
Existing file
My Recent Documents
Desktop
My Documents
My Computer
My Network Places
Step 3
File name:
test.bin
Save as type:
*.bin files
Save
Cancel
New file
Save new or existing file

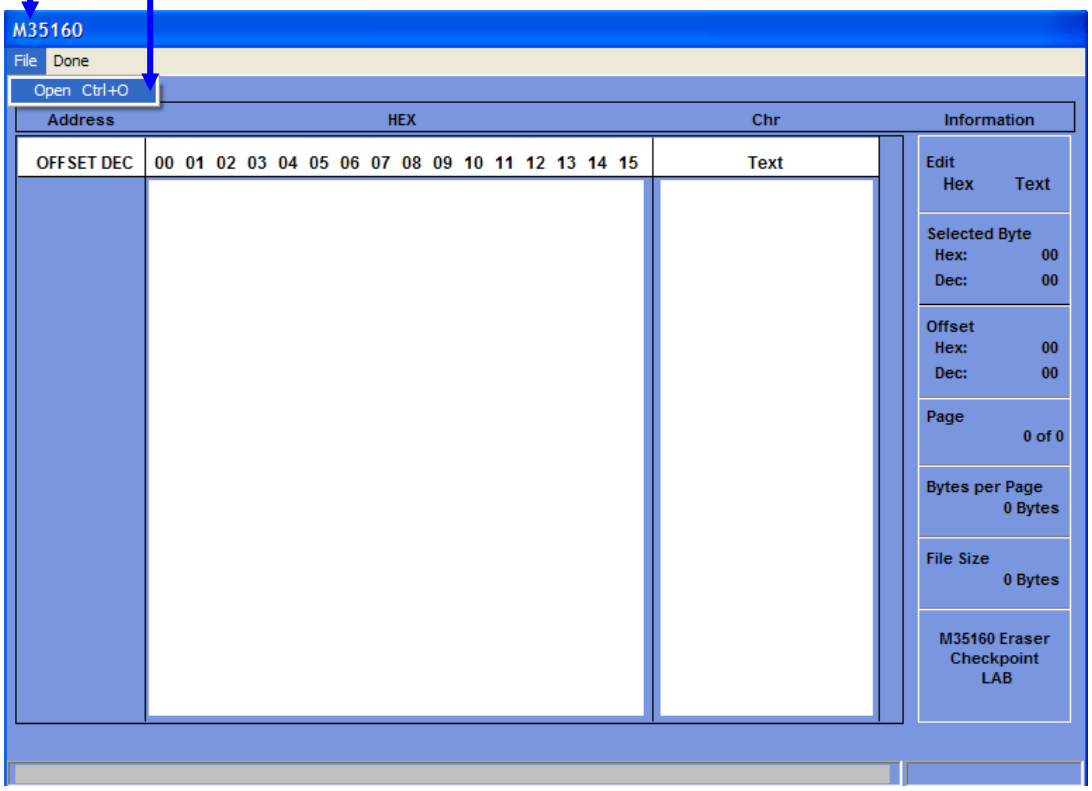

Open file
Step 5
M35160
File
Done
Open Ctrl+O
Address
HEX
Chr
Information
OFFSET DEC
00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15
Text
Edit
Hex
Text
Selected Byte
Hex: 00
Dec: 00
Offset
Hex: 00
Dec: 00
Page
0 of 0
Bytes per Page
0 Bytes
File Size
0 Bytes
M35160 Eraser
Checkpoint
LAB

Figure 10

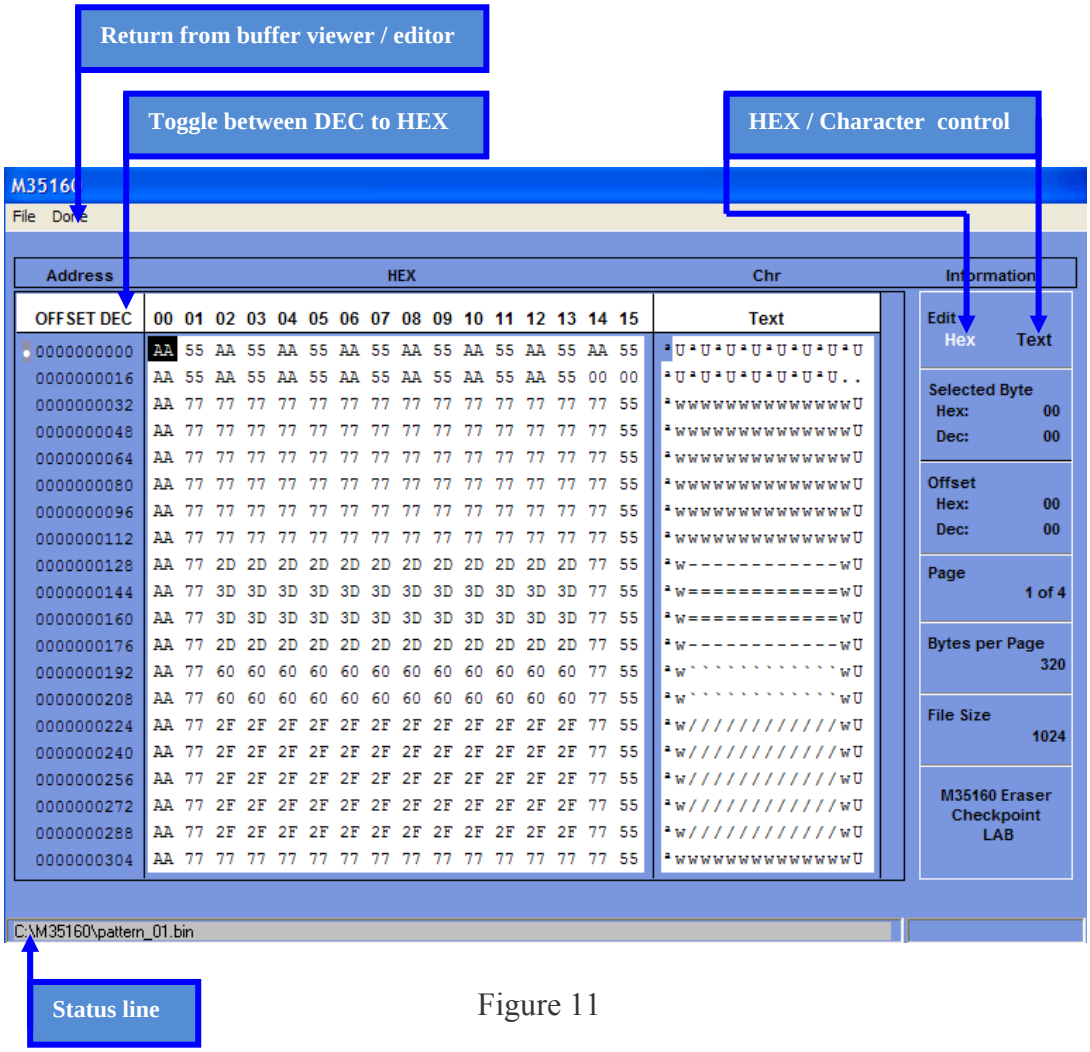


Figure 11

Status message -->

Step 3

4.3 WRITE 080 / WRITE 160 : PC mode

Practical steps:

1. By pressing the "WRITE 080" or "WRITE 160" button the file bytes are write to the target device:
   "WRITE 080" for M35080; D80D0WQ devices 8 Kbit EEPROM
   "WRITE 160" for M35160; D160D0WQ devices 16 Kbit EEPROM

NOTE: EEPROM start address of EEPROM location is 32 DEC (20 HEX). "WRINC" command must be use for changing first 32 bytes of incremental area (16 registers)

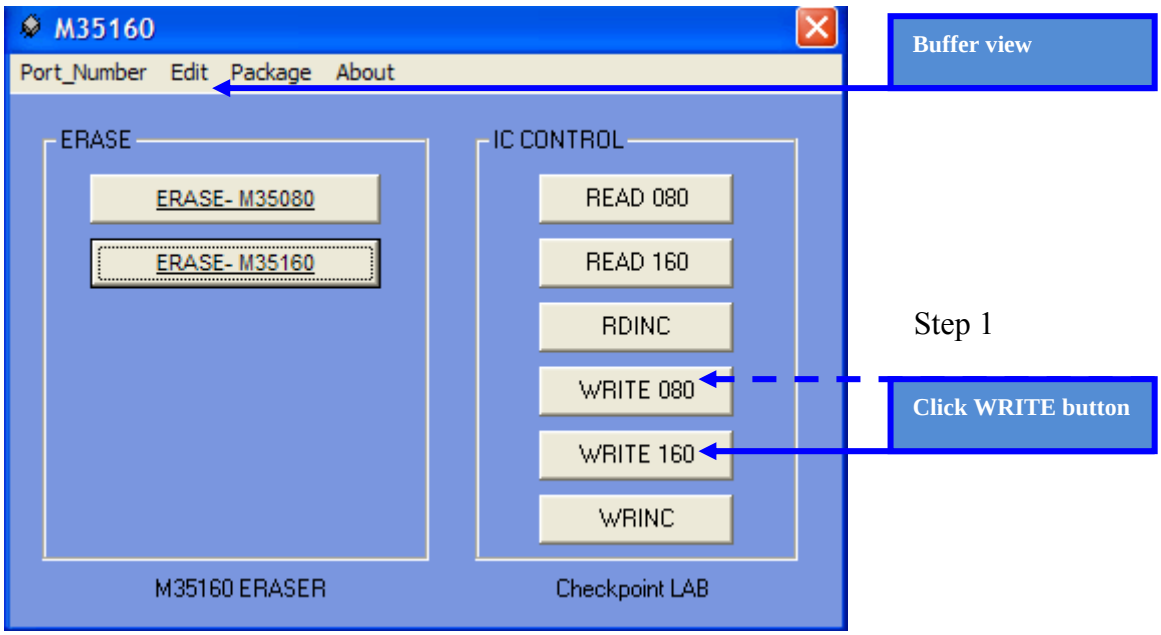


Figure 12

The "WRITE 080" and "WRITE 160" command will write contents from the specified file into the chip from address 32 DEC or 20 HEX to the end

2. The "Open" box popup. Select existing file (Figure 13)

******NOTE:***: The contents of existing file will write from address 32 DEC or 20 HEX

3. By clicking "Open" write EEPROM function are execute to the target device

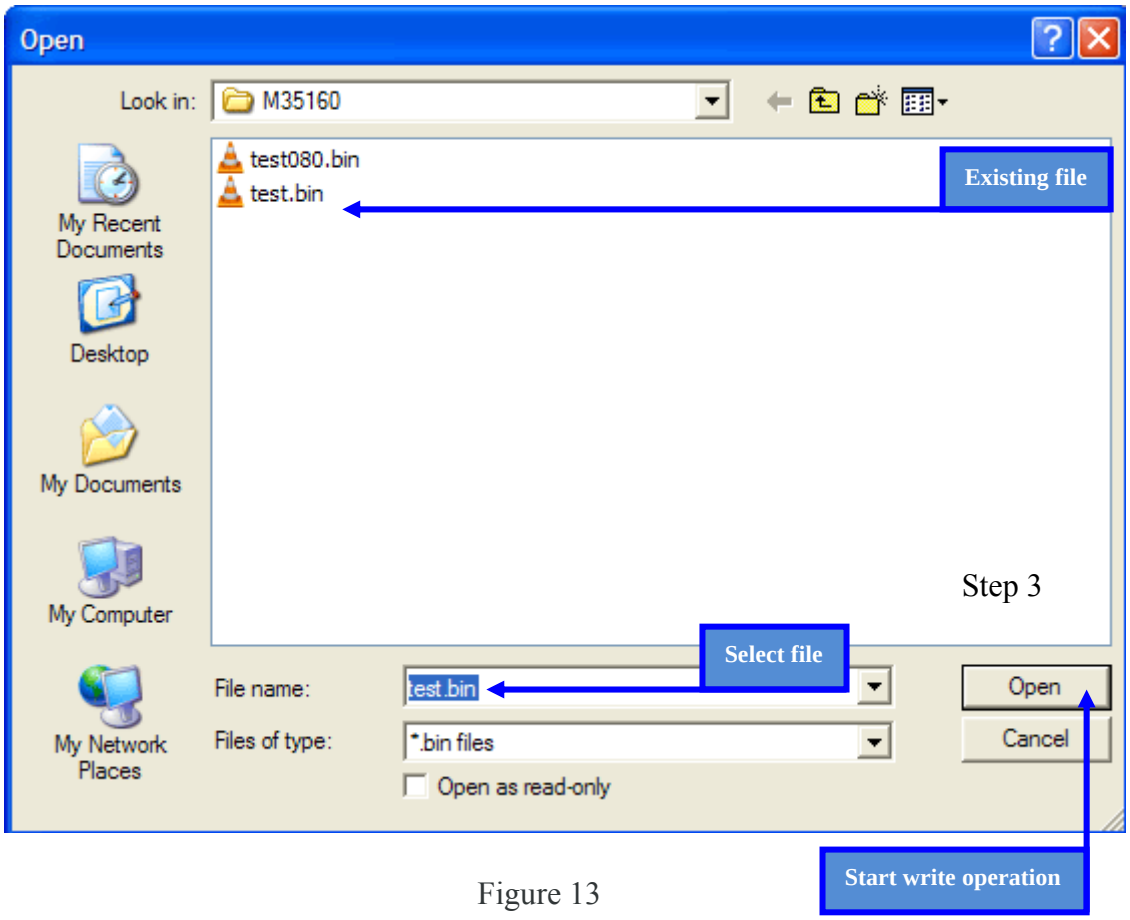
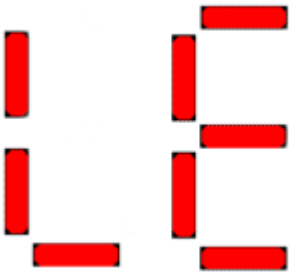


Figure 13

You'll see on numeric display message “ LE“ - load EEPROM (from address 32 DEC)

Status message -->



Step 3

4.4 RDINC / WRINC : PC mode

Practical steps:

1. RDINC" button - read incremental area. This will read first sixteen bit incremental registers from the device (M3508/M35160) into the file (Figure 9)

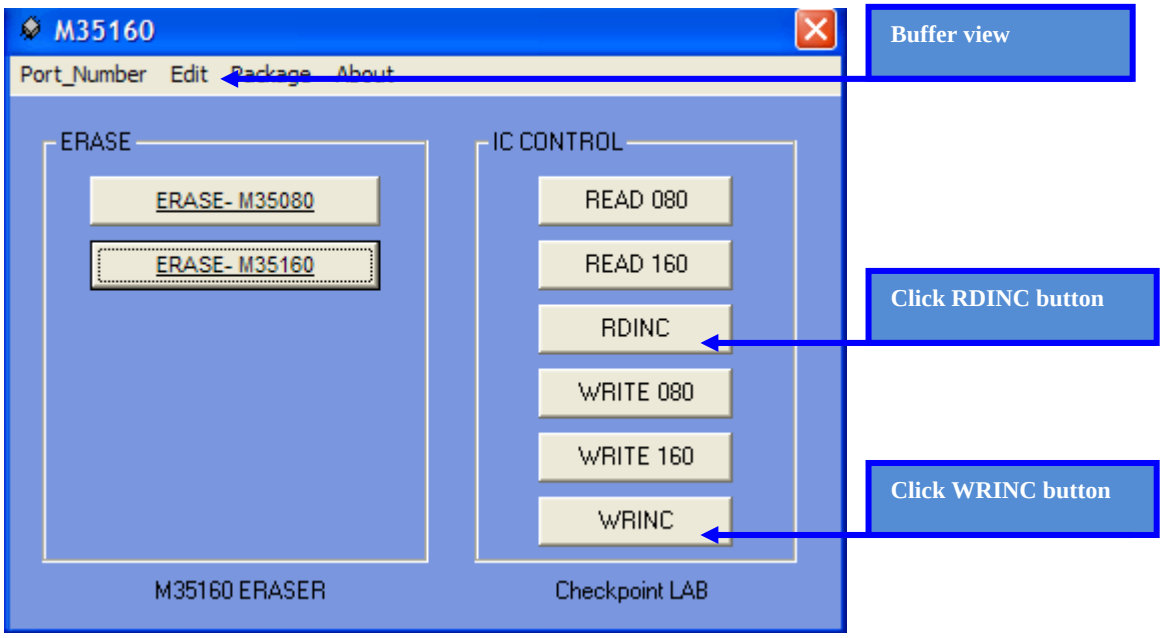


Figure 14

2. "WRINC" button – write incremental area. This will write first sixteen bit incremental registers from the file (Figure 13) into the target device.

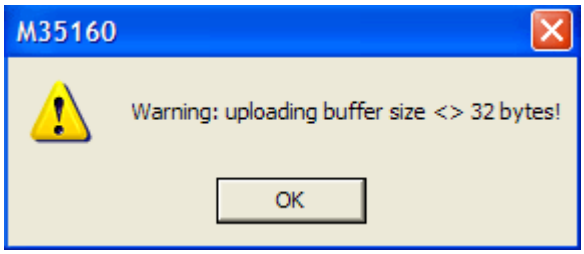


Figure 15

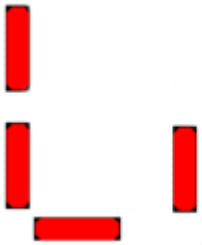
If the file size more than 32 bytes, you'll see warning window (Figure 15), what telling that first 32 bytes ***ONLY*** from the file will copy into the incremental area of the target M35080/M35160 memory.

Numeric display message “ ri“ - read incremental registers:

Status message -->

Numeric display message “ Li“ - write incremental registers:

Status message -->



4.5 ERASE : AU mode

Practical steps:

1. Re-mount mode jumper to “ AU“ position (Figure 2)
2. Make sure that “Function” jumper mounted to 160 or 080 position
   NOTE: 160 position:M35080; D160D0WQ; D080D0WQ devices
   080 position: M35080-3; M35080-6 devices
3. Turn ON the M35160 Eraser/Programmer, insert jack plug into power jack
4. Install the target device into the target socket (M35160 marked)
   Notice: 1-pin on the target socked and programming adapter "◙" marked, which point towards pin 1 of the device (Figure 3)
5. Make sure that numeric display message matches to this one: “ AU“

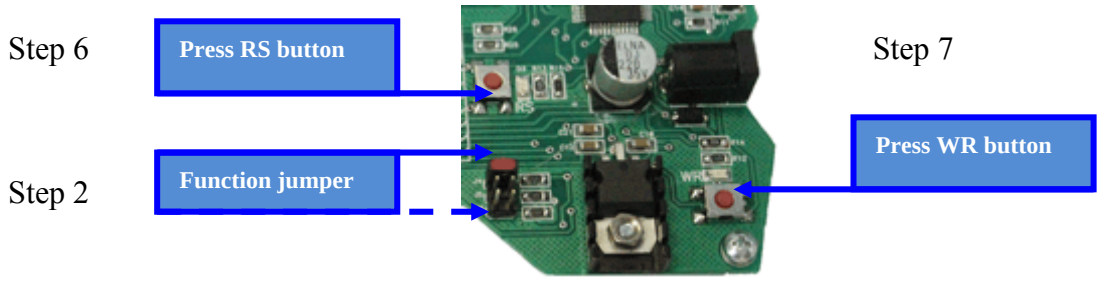


Figure 16

6. Press “RS” button for initialization hardware before erase function
7. Press “WR” button to start erase procedure
8. Numeric display will change one by one numbers of incremental registers recovered to factory settings already:

“ AU“ → “ P1“ → “ P2“→ ” 01” → ” 02”..... → ” 15” → ” 16” → “ --“

9. In the end of erase procedure you’ll see on the numeric display message: “ --“

Status message -->

4.6 TEST READ (Blank check) : AU mode

Test read function will check first 32 byte page.

If the data equal to zeros the numeric display will return message: “ 00“ .

If the data is not equal to zeros the numeric display will return message: “ EE“

1. Mode jumper mounted to “ AU“ position (Figure 2)
2. “Function” jumper must be mounted to any position 160/TST/080 for test read (blank check) function
3. Press RS button
4. Press RD button
5. Check result message on the numeric display. “ 00“ : first 32 bytes is 0x00, from now device is blank.

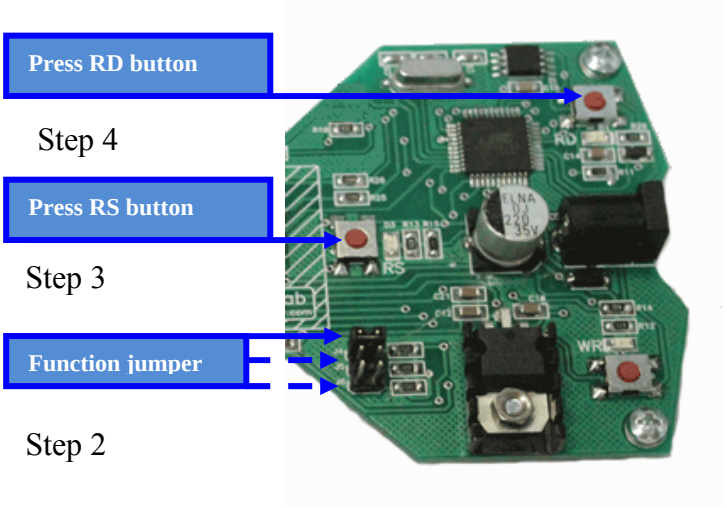
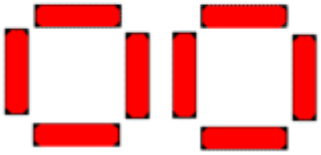


Figure 17

Status message -->



4.7 WRITE TEST PATTERN : AU mode

Write test pattern function will write test sequence into first 32 byte page. Each incremental register will write automatically with **0xAA55** value (Figure 11).

1. Mode jumper mounted to " AU" position (Figure 2)
2. "Function" jumper must be mounted to TST position for write test pattern function
3. Press RS button
4. Press WR button

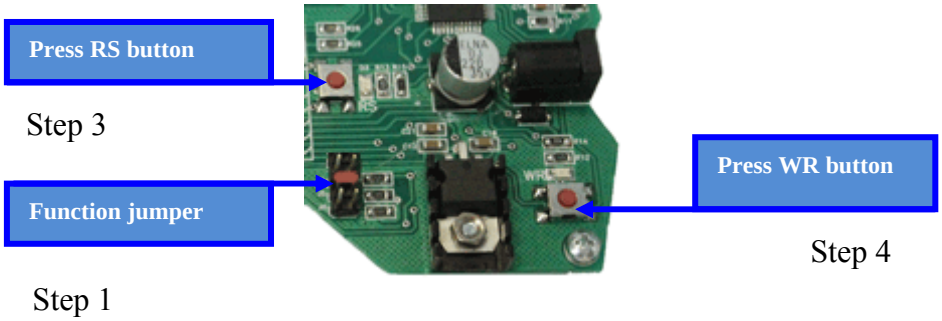


Figure 18

4.8 JUMPER SETTINGS

A master microcontroller and the five jumpers control the hardware settings of the M35160 Eraser/ Programmer. Autonomous operation mode settings see Table 1, Personal computer mode settings see Table 2. Incorrect installation see Table 3

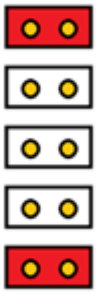
OPERATE MODE (AU) JUMPER(s) SETTINGS	ERASE MODE M35160; D160D0WQ/D80D0WQ	ERASE MODE M35080-3; M35080-6	TEST MODE
AU PC 160 TST 080			

Table 1

- AU: autonomous stand alone mode
- PC: personal computer mode
- 160: M35160/D160D0WQ/D80D0WQ device selection
- TST: test mode

Open, no jumper

Short, jumper mounted

Don't care

To configure M35160 Eraser/Programmer for usage with Personal Computer jumper must be mounted to PC position. Rest positions don't care for this case.

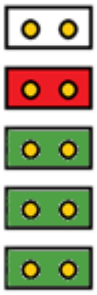
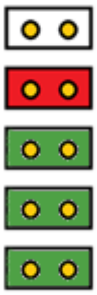
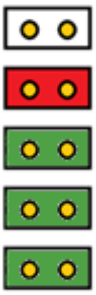
OPERATE MODE (PC) JUMPER(s) SETTINGS	ERASE MODE M35160; D160D0WQ/D80D0WQ	ERASE MODE M35080-3; M35080-6	TEST MODE
AU PC 160 TST 080			

Table 2

-

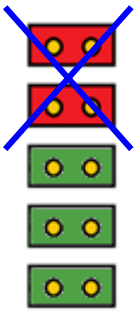
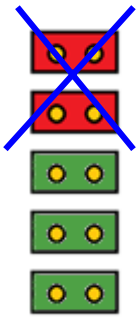
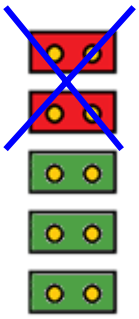
OPERATE MODES INCORRECT JUMPER(s) SETTINGS	ERASE MODE M35160; D160D0WQ/D80D0WQ	ERASE MODE M35080-3; M35080-6	TEST MODE
AU PC 160 TST 080			

Table 3

5 Troubleshooting Guide

To avoid most comment problems to using the tool please follow to the recommendations:

NOTE: Save original data from M35160/D160D0WQ/D80D0WQ/M35080 to a file, before making any changes . Use "READ 160" or "READ 080" function to save data to a binary file. Before to make any changes, such as writing a lower value to the incremental registers of a target memory make sure that incremental area erased, if no execute "WRINC" command.

◆ Problem:

The Led3 is not ON.

◆ Reason:

DC cable is broken or wrong power supply (or wrong polarity) is used

◆ Solution:

Check cable and connect the DC power cable to the DC jack or check that the power supply source is DC type 10-15 V, min. 500 mA

◆ Problem:

Programmer do not recognize a serial port

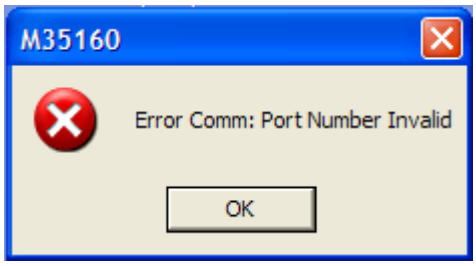


Figure 19

◆ Reason:

Serial port dot not exist

◆ Solution:

Select appropriate serial port

◆ Problem:

Led 2 endless blinking AU mode / PC mode

◆ Reason:

Target memory M3510/D160D0WQ/D080D0WQ/M35080 error (not erased)

◆ Solution:

Pay attention to first pin orientation target IC into the target socket,
short circuits on the programming adapter, then try again

◆ Problem:

Numeric display message " EE"

◆ Reason:

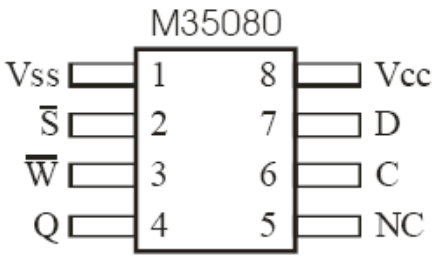
Target memory M3510/D160D0WQ/D080D0WQ/M35080 error (not erased)

◆ Solution:

Pay attention to first pin orientation target IC into the target socket,
short circuits on the programming adapter, then try again

APPENDIX I

M35160/D160D0WQ/D080D0WQ/M35080V6/M35080VP/M35080 pin out:



C - Serial Clock
D - Serial Data Input
Q - Serial Data Output
S - Chip Select
W - Write Protect
Vcc - Supply Voltage
Vss - Ground

Figure 19

Communication via Universal Serial Bus (USB):

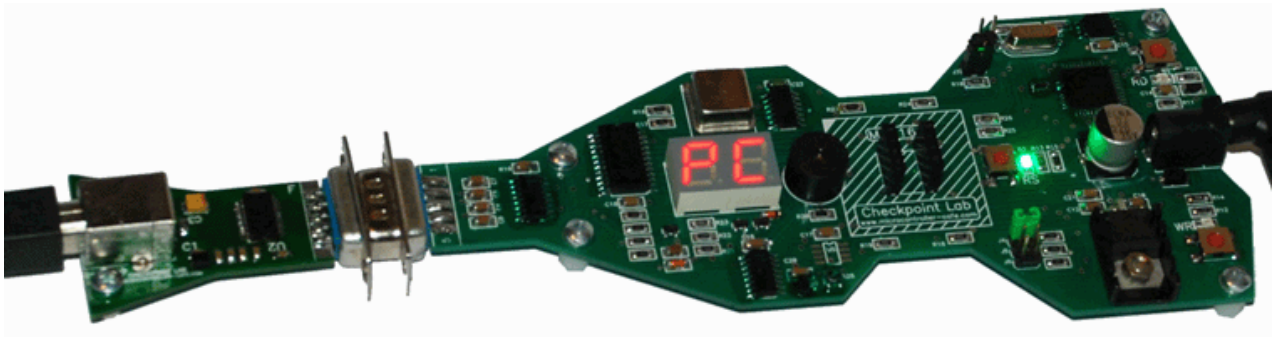


Figure 20

Via USB-RS232 converter. The series-A plug: host PC. The series B-plug: USB-RS232 converter Cable: Type - A to Type - B with maximum length 3 meters.

APPENDIX II : Warranty Statement

Checkpoint LAB warrants that the Product delivered shall conform to the applicable this manual. and shell be free from any defects in material. Report about any defects for a 45 days period from the applicable date of invoice. Products which are "prototypes", "design testing units", "samples" are sold AS IS and without a warranty.